

## AUTHOR INDEX

- Bohl, E., *see* Kreikenbohm, R. and Bohl, E.
- Caswell, H. (Woods Hole, MA, U.S.A.)  
     Theory and models in ecology: a different perspective ..... 33
- DeAngelis, D.L. (Oak Ridge, TN, U.S.A.)  
     Strategies and difficulties of applying models to aquatic populations and food webs ..... 57
- Fahrig, L. (Charlottesville, VA, U.S.A.)  
     Nature of ecological theories (comments) ..... 129
- Grant, W.E. (College Station, TX, U.S.A.)  
     Book review of *Ecology of Biological Invasions of North America and Hawaii*, by  
         H.A. Mooney and J.A. Drake (Editors) ..... 315  
     *see also* Rykiel, E.J., Jr. and Grant, W.E.
- Grant, W.E., Matis, J.H. and Miller, W. (College Station, TX, U.S.A.)  
     Forecasting commercial harvest of marine shrimp using a Markov chain model .... 183
- Graser, D.J., *see* Kot, M. et al.
- Hall, C.A.S. (Syracuse, NY and Polson, MT, U.S.A.)  
     An assessment of several of the historically most influential theoretical models used  
         in ecology and of the data provided in their support ..... 5  
     What constitutes a good model and by whose criteria? (summary of discussion) .... 125
- Herendeen, R.A. (Champaign, IL, U.S.A.)  
     Role of models in ecology (comments) ..... 133
- Kot, M. (Knoxville, TN, U.S.A.), Schaffer, W.M., Truty, G.L., Graser, D.J. (Tucson,  
     AZ, U.S.A.) and Olsen, L.F. (Odense, Denmark)  
     Changing criteria for imposing order ..... 75
- Kreikenbohm, R. and Bohl, E. (Konstanz, Federal Republic of Germany)  
     Bistability in the chemostat ..... 287
- Legović, T., *see* Oliver, J.D. and Legović, T.
- Longstaff, B.C. (Canberra, A.C.T., Australia)  
     Temperature manipulation and the management of insecticide resistance in stored  
         grain pests: a simulation study for the rice weevil, *Sitophilus oryzae* ..... 303
- Matis, J.H., *see* Grant, W.E. et al.
- Miller, W., *see* Grant, W.E. et al.
- Murtaugh, P.A. (Seattle, WA, U.S.A.)  
     Use of logistic regression in modelling prey selection by *Neomysis mercedis* ..... 225
- Oliver, J.D. and Legović, T. (Athens, GA, U.S.A.)  
     Okefenokee marshland before, during and after nutrient enrichment by a bird  
         rookery ..... 195
- Olsen, L.F., *see* Kot, M. et al.
- Onstad, D.W. (Champaign, IL, U.S.A.)  
     Population-dynamics theory: the roles of analytical, simulation, and supercomputer  
         models ..... 111
- Riley, M.J. and Stefan, H.G. (Minneapolis, MN, U.S.A.)  
     MINLAKE: a dynamic lake water quality simulation model ..... 155

Rykiel, E.J., Jr. and Grant, W.E. (College Station, TX, U.S.A.)	
Foreword special issue ISEM North American Chapter	3
Schaffer, W.M., <i>see</i> Kot, M. et al.	
Seno, H. (Kyoto, Japan)	
Effect of a singular patch on population persistence in a multi-patch system	271
Stefan, H.G., <i>see</i> Riley, M.J. and Stefan, H.G.	
Sullivan, P.J. (Seattle, WA, U.S.A.)	
Effect of boundary conditions, region length, and diffusion rates on a spatially heterogeneous predator-prey system	235
Truty, G.L., <i>see</i> Kot, M. et al.	
Ulanowicz, R.E. (Solomons, MD, U.S.A.)	
On the importance of higher-level models in ecology	45
Varis, O. (Espoo, Finland)	
Temporal sensitivity of <i>Aphanizomenon flos-aquae</i> dominance – a whole-lake simulation study with input perturbations	137
Vlad, M.O. (Bucharest, Romania)	
A new nonlinear model for the growth of age-structured populations living in patchy habitats	251
Wellings, P.W. (Canberra, A.C.T., Australia)	
Book review of <i>Pest Control: Operations and Systems Analysis in Fruit Fly Management</i> , by M. Mangel, J.R. Carey and R.E. Plant (Editors)	317





# CONTENTS OF *ECOLOGICAL MODELLING*, VOL. 43

VOL. 43 NOS. 1/2

OCTOBER 1988

## Special Issue

### ISEM NORTH AMERICAN CHAPTER

Edited by E.J. Rykiel, Jr. and W.E. Grant

#### Foreword

E.J. Rykiel, Jr. and W.E. Grant (College Station, TX, U.S.A.)	3
An assessment of several of the historically most influential theoretical models used in ecology and of the data provided in their support	
C.A.S. Hall (Syracuse, NY and Polson, MT, U.S.A.)	5
Theory and models in ecology: a different perspective	
H. Caswell (Woods Hole, MA, U.S.A.)	33
On the importance of higher-level models in ecology	
R.E. Ulanowicz (Solomons, MD, U.S.A.)	45
Strategies and difficulties of applying models to aquatic populations and food webs	
D.L. DeAngelis (Oak Ridge, TN, U.S.A.)	57
Changing criteria for imposing order	
M. Kot (Knoxville, TN, U.S.A.), W.M. Schaffer, G.L. Truty, D.J. Graser (Tucson, AZ, U.S.A.) and L.F. Olsen (Odense, Denmark)	75
Population-dynamics theory: the roles of analytical, simulation, and supercomputer models	
D.W. Onstad (Champaign, IL, U.S.A.)	111

#### Summary of Discussion

What constitutes a good model and by whose criteria?	
C.A.S. Hall (Syracuse, NY and Polson, MT, U.S.A.)	125

#### Comments

Nature of ecological theories	
L. Fahrig (Charlottesville, VA, U.S.A.)	129
Role of models in ecology	
R.A. Herendeen (Champaign, IL, U.S.A.)	133

Vol. 43 NOS. 3/4

NOVEMBER 1988

Temporal sensitivity of <i>Aphanizomenon flos-aquae</i> dominance – la whole-lake simulation study with input perturbations	
O. Varis (Espoo, Finland)	137
MINLAKE: a dynamic lake water quality simulation model	
M.J. Riley and H.G. Stefan (Minneapolis, MN, U.S.A.)	155
Forecasting commercial harvest of marine shrimp using a Markov chain model	
W.E. Grant, J.H. Matis and W. Miller (College Station, TX, U.S.A.)	183

Okefenokee marshland before, during and after nutrient enrichment by a bird rookery J.D. Oliver and T. Legović (Athens, GA, U.S.A.)	195
Use of logistic regression in modelling prey selection by <i>Neomysis mercedis</i> P.A. Murtaugh (Seattle, WA, U.S.A.)	225
Effect of boundary conditions, region length, and diffusion rates on a spatially heterogeneous predator-prey system P.J. Sullivan (Seattle, WA, U.S.A.)	235
A new nonlinear model for the growth of age-structured populations living in patchy habitats M.O. Vlad (Bucharest, Romania)	251
Effect of a singular patch on population persistence in a multi-patch system H. Seno (Kyoto, Japan)	271
Bistability in the chemostat R. Kreikenbohm and E. Bohl (Konstanz, Federal Republic of Germany)	287
Temperature manipulation and the management of insecticide resistance in stored grain pests: a simulation study for the rice weevil, <i>Sitophilus oryzae</i> B.C. Longstaff (Canberra, A.C.T., Australia)	303
<b>Book reviews</b>	
Biological invasion of North America and Hawaii	315
Fruit fly management	317
<b>Author Index</b>	321

